

What is claimed is:

- 12.9
1. A composition for diminishing symptoms of inflammatory disorders, said composition comprising γ -linolenic acid or dihomogammalinolenic acid, a Δ^5 desaturase inhibitor, and optionally a competitive inhibitor of arachidonic acid metabolism.
- 5
2. The composition of claim 1, wherein the γ -linolenic acid or dihomogammalinolenic acid, the Δ^5 desaturase inhibitor, and the competitive inhibitor are from around 80% to about 95% pure unsaturated fatty acids.
- 10
3. The composition of claim 1, wherein the Δ^5 desaturase inhibitor is eicosapentaenoic acid, sesamin, episesamin, sesaminol, sesamol, curcumin, α -linolenic acid, heneicosapentaenoic acid, docosahexaenoic acid, alkyl gallate, propyl gallate, or *p*-isopentoxaniline.
- 15
4. The composition of claim 2, wherein the Δ^5 desaturase inhibitor is a free fatty acid, a fatty acyl ester, a diglyceride, a triglyceride, an ethyl ester, a phospholipid, a steryl ester, a sphingolipid, or a combination of these.
- 20
5. The composition of claim 1, wherein the competitive inhibitor of arachidonic acid metabolism is ω -3 arachidonic acid or stearidonic acid.
- 25
6. The composition of claim 1, wherein the composition is a flavored drink.
7. The composition of claim 1, wherein the composition is a powder.
8. The composition of claim 1, further defined as comprising water, corn syrup, maltodextrin, sodium caseinate, calcium caseinate, soy protein, magnesium chloride, potassium citrate, calcium phosphate tribasic, or soy lecithin.
- 30
9. The composition of claim 1, wherein said composition is contained in an essentially oxygen-free air-tight container.

10. The composition of claim 9, wherein said container is sealed in an oxidatively inert gas environment.

11. The composition of claim 9, wherein said container is a can.

12. The composition of claim 9, wherein said container is a foil pouch.

13. The composition of claim 1 further comprising a flavoring agent.

14. The composition of claim 13, wherein said flavoring agent is a fruit flavoring agent or a fruit juice.

15. The composition of claim 13, wherein said flavoring agent is a vanilla, chocolate, eggnog, or berry flavoring agent.

16. The composition of claim 1, further comprising an antioxidant.

17. The composition of claim 16, wherein said antioxidant is beta-carotene, vitamin E, vitamin C, selenium, alpha tocopherol, or taurine.

18. The composition of claim 1, further comprising an emulsifying agent.

19. A milk based drink for treatment of inflammatory disorders comprising an unsaturated fatty acid portion, wherein said unsaturated fatty acid portion consists of γ -linolenic acid, a Δ^5 desaturase inhibitor, and stearidonic acid.

20. A juice based drink for treatment of inflammatory disorders comprising an unsaturated fatty acid portion, wherein said unsaturated fatty acid portion consists of γ -linolenic acid and a Δ^5 desaturase inhibitor.

21. The drink of claim 19, wherein said Δ^5 desaturase inhibitor is eicosapentaenoic acid, sesamin, episesamin, sesaminol, sesamolin, curcumin, heneicosapentaenoic acid, docosahexaenoic acid, alkyl gallate, propyl gallate, or *p*-isopentoxylaniline.

22. The drink of claim 20, wherein said Δ^5 desaturase inhibitor is eicosapentaenoic acid, sesamin, episesamin, sesaminol, sesamolin, curcumin, heneicosapentaenoic acid, docosahexaenoic acid, alkyl gallate, propyl gallate, or *p*-isopentoxylaniline.

23. A composition for treatment of an inflammatory disorder comprising γ -linolenic acid, eicosapentaenoic acid, and ω -3 arachidonic acid.

24. The composition of claim 23, wherein said disorder is asthma, allergic rhinitis, allergic rhinoconjunctivitis, psoriasis, acute myocardial infarction, glomerulonephritis, Crohn's disease, inflammatory bowel disease, or arthritis.

25. A composition comprising a liquid comprising an unsaturated fatty acid portion, wherein the unsaturated fatty acid portion consists of 80-95% pure γ -linolenic acid, eicosapentaenoic acid, and stearidonic acid.

26. The composition of claim 25, wherein said unsaturated fatty acid portion comprises at least one unsaturated fatty acid isolated from a transgenic cell engineered to produce said at least one unsaturated fatty acid.

27. The composition of claim 25, wherein the composition is a fruit or milk based liquid.

28. The composition of claim 25, wherein the composition is a powder.

29. The composition of claim 25, further defined as comprising water, corn syrup, maltodextrin, sodium caseinate, calcium caseinate, soy protein, magnesium chloride, potassium citrate, calcium phosphate tribasic, or soy lecithin.

30. The composition of claim 25, wherein said composition is contained in an essentially oxygen-free air-tight container.

31. The composition of claim 30, wherein said container is sealed in an oxidatively inert gas environment.

32. The composition of claim 30, wherein said container is a can.

33. The composition of claim 30, wherein said container is a foil pouch.

34. The composition of claim 25 further comprising a flavoring agent.

35. The composition of claim 34, wherein said flavoring agent is a fruit flavoring agent or a fruit juice.

36. The composition of claim 34, wherein said flavoring agent is a vanilla, chocolate, eggnog, or berry flavoring agent.

37. The composition of claim 25, further comprising an antioxidant.

38. The composition of claim 37, wherein said antioxidant is beta-carotene, vitamin E, vitamin C, selenium, alpha tocopherol, or taurine.

39. The composition of claim 25, further comprising an emulsifying agent.

40. A dietary supplement in unit dosage form for delivery of a daily dose of said dietary supplement, which consists essentially of (i) at least 1 gram of GLA for increasing DGLA levels of a user, thereby inhibiting the metabolism of arachidonic acid, (ii) an effective amount of a Δ^5 desaturase inhibitor for inhibiting accumulation of arachidonic acid in the serum of said user and, optionally, (iii) an effective amount of a competitive inhibitor of arachidonic acid metabolism.

41. The dietary supplement of claim 40, wherein said GLA is present in an amount from about 1.5 grams to about 3 grams.

42. The dietary supplement of claim 40, wherein said Δ^5 desaturase inhibitor is EPA, and said EPA is present in an amount from about 0.5 grams to about 3 grams.

43. The dietary supplement of claim 40, wherein SA is present in an amount from about 0.1 gram to about 15 grams.

44. The dietary supplement of claim 40, wherein said unit dosage is an emulsion wherein said GLA is present in an amount from about 1.5 grams to about 3 grams, said Δ^5 desaturase inhibitor is EPA, which is present in an amount from about 0.5 grams to about 3 grams, which further includes an emulsifying agent, and at least one flavoring agent, sweetening agent, coloring agent or preservative.

45. The dietary supplement of claim 44 packaged in an essentially oxygen-free, air-tight container.

46. The dietary supplement of claim 45, wherein said packaging is a foil pouch.

47. A method of treating an inflammatory disorder, or a disorder having an inflammatory component, in a patient in need of such treatment by administering to said patient an effective amount of the dietary supplement of claim 40.

48. A method of claim 47, wherein said disorder is at least one of asthma, allergic rhinitis, allergic rhinoconjunctivitis, psoriasis, acute myocardial infarction, glomerulonephritis, Crohn's disease, inflammatory bowel disease, arthritis, breast cancer, colon cancer, prostate cancer, an autoimmune diseases, systemic Lupus erythematosus, schizophrenia, depression, IgA nephropathy, sepsis, toxic shock, organ failure, organ transplant, coronary angioplasty, risk reduction for Alzheimer's disease, cystic fibrosis, atherosclerosis, menstrual discomfort, cyclic breast pain,

